

REMARKS

Presently, claims 13-50 are pending with claims 37, 38, and 43 being in independent form.

Claim Rejections under 35 U.S.C. §103

The Examiner has rejected independent claims 37 and 43 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,552,840 ("Ishii") in view of U.S. Patent No. 5,612,814 ("Yang"), and has rejected claims 37, 38, and 43 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,490,087 ("Fulkerson").¹

Independent claims 37 and 38 are directed to respective systems that require display panels that include "a micro dichroic filter array." Independent claim 43 is directed to a method that requires "directing a first beam to reflect from a first color liquid crystal on silicon (LCoS) display panel and a second beam to reflect from a second color LCoS display panel," where "the first and second color LCoS display panels each comprising a micro dichroic filter array."

Applicants traverse the rejections for the following reasons.

Rejections in view of Ishii and Yang

The Examiner admits that "Ishii et al. does not teach the use of dichroic filters as the filter means," but states that "[i]t would have been obvious to one skilled in the art at the time of the invention to modify the device of Ishii et al. by the substitution of dichroic filter means for dye filters in order to reflect undesired colors and avoid heat buildup caused by absorption" (Office Action, §2).

We disagree because there is no suggestion or motivation to modify the displays disclosed in Ishii to include "a micro dichroic filter array." Ishii is concerned with providing projection displays capable of displaying three-dimensional images that overcome the drawback of large size that is a property of prior three-dimensional projection displays (Ishii, col. 2, line 13

¹ On page 3 of the Office Action, para. 4, the rejection of claims 37-43, 45-46, 48-50, 13-16, 19, 23, 25-33, and 36 is made in view of Fulkerson et al. alone. However, in explaining the rejection, in the Office Action on page 4, the Examiner cites Yang as disclosing a "dichroic color filter means." In the event that the Examiner maintains the rejection, applicants asked the Examiner to clarify which references are relied on for the rejection.

– col. 3, line 2 and col. 4, lines 21-29). Ishii's designs provide color images in one of two different ways: either by sequential illumination of the panels with different colors (id., col. 6, line 11 – col. 7, line 63) or by spatially synthesizing color images using absorptive color filter arrays, which Ishii refers to as a "color microfilter" (id., col. 13, lines 21-65). While Ishii discloses, for the latter embodiments, that "a color microfilter can be provided on each pixel by dyeing, electrodeposition, printing, etc.," the only type of filter disclosed by Ishii are dyed filters (id.). Nowhere does Ishii disclose that other types of color filter could be used, let alone that other types of filter would be preferred. To the contrary, Ishii achieves his objectives by designs that include filters that are dyed filters. Thus, a person of ordinary skill in the art would not have been motivated to modify Ishii's designs to include micro dichroic filter arrays.

A skilled person would not have been motivated to modify Ishii based on Yang. Yang discloses "an optical projection system having a reduced size and of a simpler structure" relative to prior displays that utilize three arrays of actuated mirrors, corresponding sets of field lenses, and a pair of dichroic mirrors (Yang, col. 1, lines 17-28 and col. 2, lines 32-45). In Yang's projection system, a single array of actuated mirrors is used in conjunction with an array of pixel filters (id., col. 2, line 46 – col. 3, line 30), allowing for a size reduction relative to the display with three mirror arrays. However, applicants could find no disclosure in Yang to suggest that his pixel filter arrays would be superior in Ishii's designs relative to the filter arrays disclosed by Ishii. Accordingly, a skilled person would not have been motivated, upon reading Yang, to modify Ishii's designs to include the pixel filter arrays described by Yang.

Moreover, there is no basis for the rationale for modifying Ishii set forth in the Office Action because there is no indication that "heat buildup" is an issue in the displays disclosed by Ishii. Ishii mentions a number of drawbacks in prior art devices, but none of them involve "heat buildup." Rather, as discussed *supra*, Ishii is concerned with providing a compact, three-dimensional display, which he achieves by designs that do not include micro dichroic filter arrays.

The rejection of claims 37 and 43 in view of the combination of Ishii and Yang are hindsight reconstructions, using applicants' claims as a template to reconstruct the invention by

picking and choosing isolated disclosures from the prior art. This is impermissible under the law. For example, in *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992), the Federal Circuit stated:

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600)

The present rejections fits the court's description of what may not be done under § 103. The Examiner has merely listed certain components of applicant's invention and then located isolated disclosures of those components. The law requires more than that.

The Examiner must show where the prior art provides a motivation to combine the references he/she has combined in the obviousness rejection. Absent a motivation to combine, obviousness has not been demonstrated. As the Federal Circuit stated in *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 934, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990):

It is insufficient that the prior art disclosed the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor.

In summary, neither Ishii nor Yang, either alone or in combination, disclose or suggest systems or methods that include all the limitations set forth in claims 37 and 43, respectively. Nor would one of ordinary skill have been motivated to modify the systems and methods disclosed in Ishii to include all the limitations set forth in claims 37 and 43. Accordingly, applicants submit that claims 37 and 43 are not obvious in view of the combination of Ishii and Yang and we ask that the prior art rejection of these claims be withdrawn.

The Action rejected claims 13-16, 18, 20-24, 33, and 35-36 as being obvious in view of the combination of Ishii and Yang. Claims 13-16, 18, 20-24, 33, and 35-36 depend, either directly or indirectly from claim 37. Accordingly, these claims should be allowable over the combination of Ishii and Yang for at least those reasons set forth above in connection with claim

37. We ask, therefore, that the rejection of claims 13-16, 18, 20-24, 33, and 35-36 in view of Ishii and Yang be withdrawn.

The Action also rejected claims 44-46 and 48-50 as being obvious in view of the combination of Ishii and Yang. These claims depend, either directly or indirectly from claim 43. Accordingly, these claims should be allowable over the combination of Ishii and Yang for at least those reasons set forth above in connection with claim 43. We ask, therefore, that the rejection of claims 44-46 and 48-50 in view of Ishii and Yang be withdrawn.

Claims 17 and 47 were rejected as being obvious over Ishii in view of Yang and Brennesholtz (U.S. Patent No. 6,280,034). Claim 17 depends indirectly from claim 37 and claim 47 depends indirectly from claim 43 and Brennesholtz does not cure the deficiencies of Ishii and Yang with respect to claims 37 and 43. Accordingly, upon reading Brennesholtz and Yang, one of ordinary skill would not have been motivated to modify the systems and methods disclosed by Ishii to include "micro dichroic filter array[s]." Applicants submit, therefore, that claims 17 and 47 are not obvious in view of the combination of Ishii, Yang, and Brennesholtz and we ask that the prior art rejection of these claims be withdrawn.

Claim 34 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishii in view of Yang and Pentico (U.S. Patent No. 6,857,747). Claim 34, as amended, depends from claim 37 and Pentico does not cure the deficiencies of Ishii and Yang with respect to claim 37. Accordingly, upon reading Pentico and Yang, one of ordinary skill would not have been motivated to modify the systems disclosed by Ishii to include first and second display panels each comprising "a micro dichroic filter array." Applicants submit, therefore, that claim 34 is not obvious in view of the combination of Ishii, Yang, and Pentico and we ask that the prior art rejection of this claim be withdrawn.

Rejections in view of Fulkerson

The Examiner has also rejected claims 37-43, 45-46, 48-50, 13-16, 19, 23, 25-33, and 36 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,490,087 ("Fulkerson") in view of Yang.

Fulkerson does not disclose systems or methods that include micro dichroic filter arrays. Rather, Fulkerson's systems use either a color filter wheel or single dichroic filters each associated with a different LCD panel (see, e.g., Fulkerson, col. 9, lines 3-15).

There is no suggestion or motivation to modify the designs disclosed by Fulkerson to include filter arrays at all, let alone micro dichroic filter arrays. To the contrary, a person of ordinary skill would not be motivated to modify Fulkerson's systems to include a micro dichroic filter array because this would, in effect, involve using an optical component that is more complex, and therefore more expensive, than the single dichroic filters disclosed by Fulkerson, defeating stated objectives of Fulkerson's – to provide optical systems that are “mechanically simple” and “minimize[] the use of expensive optical components” (id., col. 2, lines 11-21).

Applicants could find no disclosure in Yang to suggest that his pixel filter arrays would be desirable in Fulkerson's designs. Accordingly, a skilled person would not have been motivated to modify Fulkerson's designs to include the pixel filter arrays described in Yang.

Furthermore, contrary to the rationale set forth in the Office Action, applicants could find no disclosure in Fulkerson that “heat buildup” is an issue in his systems.

Like the rejection of claims 37 and 43 in view of Ishii and Yang, the rejection of claims 37, 38, and 43 in view of Fulkerson and Yang are hindsight reconstructions and impermissible under the law. Accordingly, applicants submit that claims 37, 38, and 43 are not obvious in view of Fulkerson alone or in view of the combination of Fulkerson and Yang, and ask, therefore, that the rejection of these claims be withdrawn.

The Action also rejected claims 39-42, 45-46, 48-50, 13-16, 19, 23, 25-33, and 36 as being obvious in view of Fulkerson. Claims 39-42, 45-46, 48-50, 13-16, 19, 23, 25-33, and 36 depend, either directly or indirectly from claims 37, 38, or 43. Accordingly, these claims should be allowable over Fulkerson for at least those reasons set forth above in connection with claims 37, 38, and 43. We ask, therefore, that the rejection of claims 39-42, 45-46, 48-50, 13-16, 19, 23, 25-33, and 36 in view of Fulkerson be withdrawn.


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We submit that all claims are in condition for allowance, which action is requested.
Please apply any charges or credits to deposit account 06-1050, referencing Attorney Docket No.
17707-002US1.

Respectfully submitted,

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Chris C. Bowley
Reg. No. 55,016

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906